

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Coonville Creek

Water Body Segment at a Glance:

County: St. Francois
Nearby City: Bonne Terre
Water Body ID: 2177
Segment Length: 1.3 miles
Watershed Size: 3.9 square miles
Pollutants: Lead dissolved in water
Source: Unknown



Statewide Map Showing Location of Watershed

Scheduled for TMDL development: 2025

Description of the Problem

Designated beneficial uses of Coonville Creek:

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Uses that are impaired:

- Protection of Warm Water Aquatic Life

Standards that apply

Chronic and acute criteria for dissolved lead are found in Table A of Missouri's water quality standards at 10 CSR 20.7.031. These criteria are hardness dependent and are calculated using the following equations.

- Acute: $e(1.273 \cdot \ln(\text{Hardness}) - 1.460448) * (1.46203 - (\ln(\text{Hardness}) * 0.145712))$
- Chronic: $e(1.273 \cdot \ln(\text{Hardness}) - 4.704797) * (1.46203 - (\ln(\text{Hardness}) * 0.145712))$

In addition to the specific numeric criteria found in Table A, the following narrative criteria in Missouri's water quality standards also pertain to this lead impairment.

- Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life [10 CSR 20-7.031(3)(D)].
- Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(3)(G)].

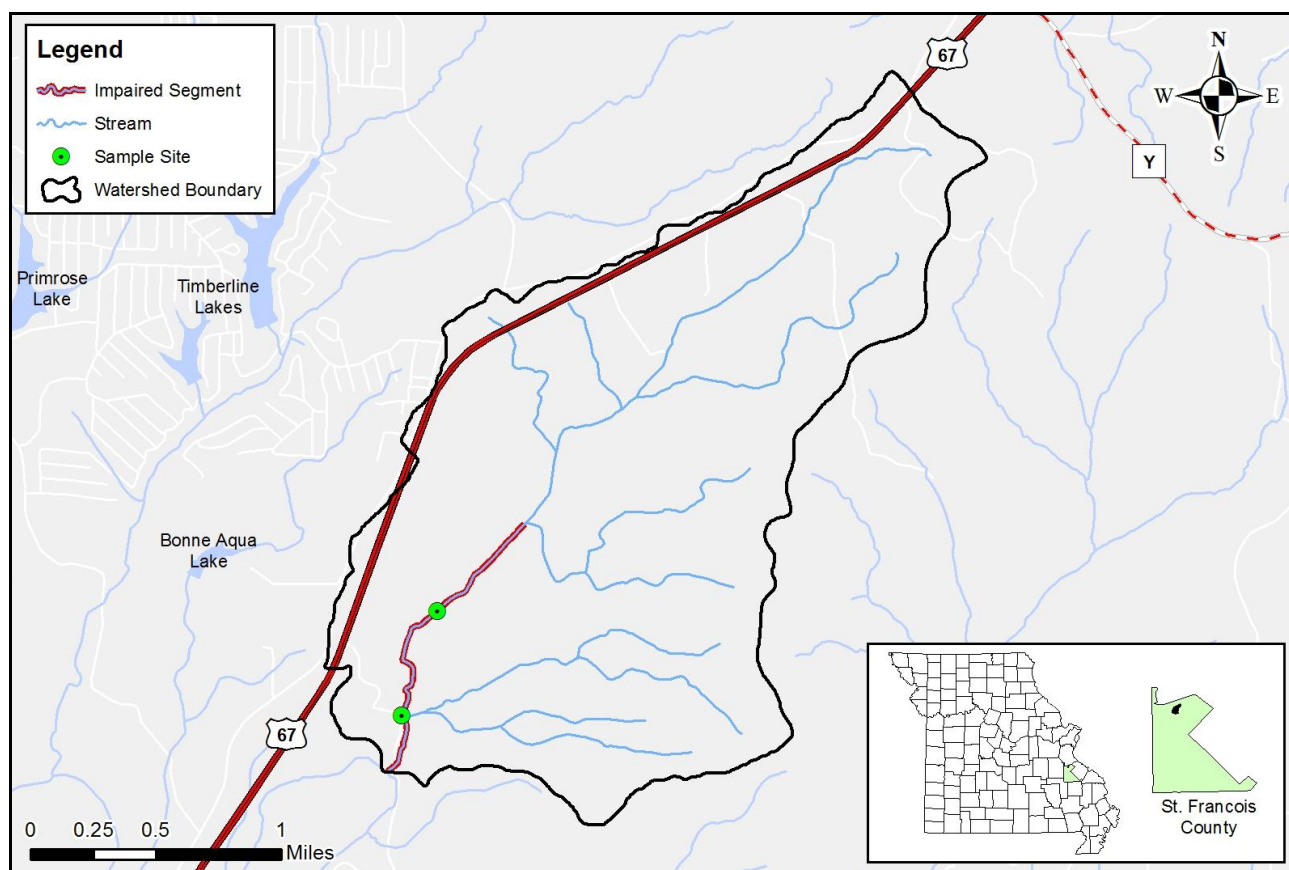
Background information and water quality data

Coonville Creek is a rural stream located approximately 2 miles north of Bonne Terre and is a tributary of the Big River. The chronic lead criterion for the protection of aquatic life is hardness dependent. The estimated 25th percentile hardness value in Coonville Creek is 190 milligrams per liter, giving a chronic lead criterion value of 5.02 µg/L. Waters are judged to be impaired by toxics such as lead if there is more than one exceedance of the criterion in the last three years of available data that was collected during stable flow conditions. The most recent available data was collected in 2012. All three samples collected that year exceeded the calculated criterion. Additional exceedances were observed in data collected in 1995 and 1996. Historic mining activities in the area, including a suspected smelter site, are likely playing a role in the lead impairment.

Recent Dissolved Lead Data

<i>Sampling Organization</i>	<i>Sampling Location</i>	<i>Month</i>	<i>Day</i>	<i>Year</i>	<i>Flow</i>	<i>Hardness</i>	<i>Dissolved Lead</i>
MoDNR	0.5 mile above Park Road	6	19	2012	0.7	274	9.62
MoDNR	Near stream mouth	4	4	2012	0.45	294	5.07
MoDNR	Near stream mouth	6	19	2012	0.8	278	5.35

Map Showing the Coonville Creek Watershed



Note: Final TMDLs developed for Coonville Creek will be based on the most current and available data and information.

For more information call or write:

Missouri Department of Natural Resources

Water Protection Program

P.O. Box 176, Jefferson City, MO 65102-0176

1-800-361-4827 or 573-751-1300 office; 573-526-6802 fax

Program Home Page: dnr.mo.gov/env/wpp/index.html